

Reinforcement Learning

Inverse Reinforcement Learning

Single Agent

Tabular representation of reward
 Model-based control
 Model-free control
 (MC, SARSA, Q-Learning)

Function representation of reward
 1. *Linear value function approx*
 (MC, SARSA, Q-Learning)
 2. *Value function approximation*
 (Deep Q-Learning, Double DQN,
 prioritized DQN, Dueling DQN)
 3. *Policy function approximation*
 (Policy gradient, PPO, TRPO)
 4. *Actor-Critic methods*
 (A2C, A3C)

Review of Deep Learning
*As bases for non-linear function
 approximation (used in 2-4).*

Linear reward function learning
 Imitation learning
 Apprenticeship learning
 Inverse reinforcement learning
 MaxEnt IRL
 MaxCausalEnt IRL
 MaxRelEnt IRL

Non-linear reward function learning
 Generative adversarial
 imitation learning (GAIL)

 Adversarial inverse reinforcement
 learning (AIRL)

Review of Generative Adversarial nets
 As bases for non-linear IRL

Multiple Agents

Multi-Agent Reinforcement Learning
 Multi-agent Actor-Critic
 etc.

Multi-Agent Inverse Reinforcement Learning
 MA-GAIL
 MA-AIRL
 AMA-GAIL

Applications